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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/806,824	08/03/2001	Manfred Gerresheim	0656-0248P	7746

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EXAMINER

MAKI, STEVEN D

ART UNIT	PAPER NUMBER
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1733

DATE MAILED: 03/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/806,824

Applicant(s)

GERRESHEIM ET AL.

Examiner

Steven D. Maki

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 February 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,5-14 and 16-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,5-14 and 16-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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1) The drawings are objected to because:

(1) in each of figures 1 and 2 in drawing sheet 1 filed 7-23-03, the tip of left arrow for indicating distance τ should be at the y axis (instead of at the vertical line extending through point 5) and the tip of the right arrow for indicating distance τ should be at the vertical line extending from the intersection of the tangent at $t=0$ and $y=a+b$ (see indication of distance τ in figure 3);

(2) in figure 2, " $y = 8$ " should be $-y = a--$.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

2) The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3) Claims 1, 5-14 and 16-25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, there is no clear antecedent basis for "the groove". It is unclear how many grooves are being claimed. In claim 1, it is suggested to insert --separated by grooves-- after "tread blocks".

In claim 5, the description of parameter b and parameter τ is confusing and ambiguous. In claim 5, it is suggested to change the last four lines to --the exponential function $y(t)$, with a parameter b being the distance between the start of the tread block boundary surface and the base of the groove, with a parameter τ being the distance

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between the y-axis and the intersection of the tangent at the tread block boundary surface at $t=0$ and the line defined by $y = a + b$, and with t being the tread block length.--

In claim 7 line 4, --,-- should be inserted after "function".

Claims 9 and 10 are ambiguous since they refer to the exit side lowering whereas claim 1 only describes subject matter of entry side lowering. On line 1 of each of claims 9 and 10, it is suggested to change "claim 1" to --claim 6--.

In claim 14, the description of angle is ambiguous. In claim 14, it is suggested to change the wherein clause to --wherein the groove at the entry side defines an angle with respect to the radial direction in the range between 15° and 25° and the groove at the exit side defines an angle with respect to the radial direction in the range of 0° to 13° --.

Claim 18 is indefinite because it unclear if it should depend on claim 17 instead of claim 6 so as to avoid being a duplicate of claim 7. In claim 18, the following changes are suggested: (1) on line 1 change "claim 6" to --claim 1-- and (2) on line 3 insert --,-- after "function".

In claim 25, the description of the angle is ambiguous. It is suggested to amend claim 25 in the same manner as suggested for claim 14.

4) The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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5) The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6) Claims 1, 6, 9, 10 and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Hanya (US 5450885).

Hanya discloses a pneumatic tire having a tread comprising blocks defined by circumferential grooves G and axial grooves 20. Hanya teaches forming the cross sectional shape of the circumferential grooves such that each groove has an outer convexly curved portion 6 extending from point B1 to point B2 and an inner concavely curved portion 7 extending from point B2 to point B3. Point B2 is an inflection point at which the curve changes from convex to concave. The convex curve may intersect the tread surface so as to define an intersecting angle or may be smoothly connected to the tread surface. Hence, the groove has a continuously curved S-shape. Hanya explains that this cross section shape reduces noise without sacrificing wet performances. Hanya discloses that each curve may be defined by a single radius, an involute curve or a curve part of an ellipse. See col. 5 lines 9-15. Hence, Hanya teaches a curved s-shaped groove wall defined by an "exponential function". At col. 5 lines 4-6, Hanya states "[i]n the axial grooves, the above explained cross sectional shapes for the main circumferential grooves G may be employed ...".

In claims 1, 6, 9, 10 and 16, the claimed tire is anticipated by Hanya's tire having axial grooves provided with the disclosed cross sectional shape. The claimed lowering

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reads on the "lowering" caused by the convexly curved portion of the s-shaped groove wall. The mere description of "exponential function $y(t)$ " fails to define a curve not suggested by Hanya.

7) Claims 1, 6, 9, 10 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japan '304 (JP 6-166304) in view of Hanya.

Japan '304 discloses a pneumatic tire having a tread comprising blocks defined by transverse grooves wherein the entry transverse edge of the block and the exit transverse edge of the block each has a lowered height T1 whereas the most protrudent point B of the block has a height T2 so that the tire has improved resistance to heel and toe wear. Japan '304 does not recite forming the transverse grooves so as to have the claimed s-shape.

As to claim 1, it would have been obvious to one of ordinary skill in the art to shape the transverse grooves separating blocks such that "the contour of the tread block boundary surface extending from a start of the lowering up to the base of the groove extends in section planes parallel to the central plane of the tire in the form of an extended s-curve, and wherein the curvature of the s-curve continuously changes in accordance with an exponential function $y(t)$ along an entire length of the s-curve" since Hanya suggests forming transverse grooves separating blocks such that each transverse groove has an upper convexly curved portion and a lower concave portion to reduce noise without sacrificing wet performance.

As to claim 6, the application of the cross sectional shape of Hanya to the transverse grooves causes each the entry side and the exit side to have the s-shape.

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As to claims 9 and 10, the limitations of the claimed plateau would have been obvious in view of Japan '304's teaching to lower the block edges to height T1 to reduce heel and toe wear. Claims 9 and 10 fail to require a flat plateau.

As to claim 16, the limitation of the turning point being in the lower third would have been obvious in view of Hanya's teaching to locate point B2 radially inward of a radial position corresponding to $\frac{1}{2}$ of groove depth.

8) Claims 7, 8 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japan '304 in view of Hanya as applied above and further in view of Remick (US 5127455).

As to claims 7, 8 and 14, it would have been obvious to incline the side of Japan '304's block at the trailing edge steeper than the side of the block at the leading edge since Remick suggests inclining the side of a block at the trailing edge steeper than the side of the block at the leading edge to improve wear / life of the tire.

9) Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Japan '304 in view of Hanya as applied above and further in view of Masaoka (US 5690761).

As to claim 11, it would have been obvious to form the steepness of the entry side and exit side of Japan '304's block different over their width since Masaoka suggests lowering the shoulder side of the edge of the block more than the equatorial plane side of the edge so as to further improve reduction in heel and toe wear.

10) Claims 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japan '304 in view of Hanya as applied above and further in view of Japan '907 (JP 3-32907), Europe '557 (EP 367557) or Europe '125 (EP 591125).

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As to claims 12 and 13, it would have been obvious to use the claimed different depths in the tire tread of Japan '304 in view of Japan '907's teaching to use different depths for transverse grooves to improve operational stability and secure drainability, Europe '125's teaching to use different depths of transverse grooves to compensate for material which flows into joints between mold segments or Europe '557's teaching to use different depths for transverse grooves so that rigidity is made uniform when using pitches for reducing noise.

Allowable Subject Matter

11) Claims 5 and 17-25 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims. Specific suggestions for overcoming all of the 112 second paragraph issues are given in paragraph 3 of this office action.

Remarks

12) Applicant's arguments with respect to claims 1, 6-14 and 16 have been considered but are moot in view of the new ground(s) of rejection.

13) Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven D. Maki whose telephone number is (571) 272-1221. The examiner can normally be reached on Mon. - Fri. 7:30 AM - 4:00 PM.

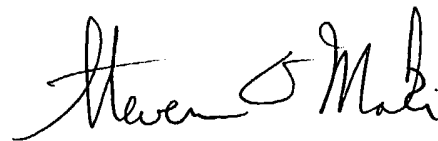
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone

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number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Steven D. Maki
March 15, 2004


STEVEN D. MAKI 3-15-04
PRIMARY EXAMINER
~~GROUP 1300~~
Av 1733